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# 植物生长调节剂对大豆叶片同化物及内源激素代谢到：

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**Title:** Effects of Plant Growth Regulators(PGRs) on Metabolism of Assimilation and Endogenous Hormone in Soybean Leaves

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**关键词:** 植物生长调节剂; 大豆; 同化物; 内源激素

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**摘要:** 在大田栽培条件下,以垦农4号大豆(Glycine max)为材料,通过叶面喷施SOD模拟物(SOD-M)、2-N,N-二乙氧基乙基己酸酯(DTA-6)和氯化胆碱(Cc)3种植物生长调节剂,比较了大豆叶片中几种内源激素含量变化的差异,研究了大豆叶片中同化物代谢的差异,为大豆后期抗衰老和生理代谢功能的提高提供参考。结果表明: SOD<sub>M</sub>和DTA-6处理明显提高了叶片中的可溶性蛋白质、可溶性糖、硝态氮以及游离氨基酸含量,而调节剂Cc则表现不明显。另一方面,在喷药后5~30 d, SOD<sub>M</sub>明显的提高了IAA、GA以及CTK的含量,而在喷药后15~30 d, DTA-6提高了IAA和CTK的含量, Cc则在不同程度上降低了IAA和CTK。综合分析表明,叶面喷施SOD<sub>M</sub>和DTA-6,维持了叶片中同化物和内源激素的正常生理代谢功能,有效的提高了叶片抗氧化能力和控制了叶片的衰老进程。

**Abstract:** The physiological characteristic of leaf is one of the main problems on filling progress in soybean grain, and senescence is a key factor affecting leaf photosynthetic physiology. In the present study, we used a soybean (*Glycine max*) cultivar, Kennong 4 and three plant growth regulators (PGRs), SOD simulation material (SOD<sub>M</sub>), Choline chloride (Cc) and Diethyl aminoethyl hexanoate (DTA-6) by spraying in a field experiment. The aim of this experiment was to discover difference of metabolism assimilation and investigate responses of endogenous hormone in soybean leaves to different exogenous PGRs. It was also to provide references for anti-aging and increasing function of metabolism assimilation in the pod filling (R5) stage. The results showed that SOD<sub>M</sub> and DTA-6 significantly enhanced contents of soluble proteins, soluble sugar, NO<sub>3</sub><sup>-</sup>-N and free amino acids (FAA), but Cc was not obvious. On the other hand, SOD<sub>M</sub> significantly increased the contents of IAA, GA, and CTK from the 5th day to the 30th day after spraying. DTA-6 improved the contents of IAA and CTK from the 15th day to the 30th day after spraying, however, the contents of IAA and CTK were reduced with Cc in varying degrees. The above results indicated that SOD<sub>M</sub> and DTA-6 were effective to enhance the antioxidant capacity and slow down the senescence of leaves, and control physiological assimilation function of metabolism assimilation in soybean leaves.

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